

## CLAIMS

What is claimed:

- 1        1. An apparatus comprising:
  - 2              a rod comprised of a non-metal, said rod adapted to reinforce a hollow
  - 3              tube.
- 1        2. The apparatus of claim 1 wherein said material is selected from the  
2        group consisting of: polyamides, PEEK, PPS, PEI, PI, liquid crystalline polymers,  
3        glass reinforced polymers, graphite reinforced polymers, and any combination  
4        thereof.
- 1        3. The apparatus of claim 1 wherein said rod has a proximal section and  
2        a distal section and said proximal section has a larger diameter than said distal  
3        section.
- 1        4. The apparatus of claim 3 wherein said distal section is more flexible  
2        than said proximal section.
- 1        5. The apparatus of claim 1, said rod having a proximal section and a  
2        distal section wherein said proximal section is annealed to induce a higher  
3        crystallinity such that said proximal section is stiffer than said distal section.

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1       6. A catheter comprising:  
2           an outer member;  
3           a hollow inner member extending through said outer member;  
4           an outer lumen between said inner and outer members; and,  
5           a rod comprising a non-metal, said rod extending through said outer  
6       lumen.

1       7. The apparatus of claim 6 wherein said material is selected from the  
2       group consisting of: polyamides, PEEK, PPS, PEI, PI, liquid crystalline polymers,  
3       reinforced polymers, glass reinforced polymers, graphite reinforced polymers,  
4       and any combination thereof.

1       8. The catheter of claim 6 wherein said rod has a proximal section and a  
2       distal section and said proximal section has a larger diameter than said distal  
3       section.

1       9. The catheter of claim 8 wherein said distal section is more flexible than  
2       said proximal section.

1       10. The catheter of claim 6, said rod having a proximal section and a distal  
2       section, wherein said proximal section is annealed to induce a higher crystallinity  
3       such that said proximal section is stiffer than said distal section.